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GENERAL PERMIT REGISTRATION APPLICATION ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Registration No.:	G50-B109
Plant ID No.:	029-00081
Applicant:	Golden Triangle Construction Co., Inc.
Facility Name:	Chester
Location:	Chester, Hancock County
SIC / NAICS Code:	3273 / 327390
Application Type:	Construction
Received Date:	February 27, 2017
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$500.00
Complete Date:	April 06, 2017
Applicant Ad Date:	March 08, 2017
Newspaper:	*The Review*
UTM's:	Easting: 538.92565 km Northing: 4494.12794 km Zone: 17
Description:	Applicant has applied for a General Permit to construct and operate a mobile concrete batch plant.

PROCESS DESCRIPTION (taken from the Application)

Golden Triangle Construction Company, Inc.'s Chester, West Virginia concrete batch plant will operate from April 15th to September 15th, 2017. The facility will generate approximately 14,000 cubic yards of concrete for a nearby highway repair project.

Trucks will deliver the raw material for the concrete (the provided tonnage is for the total life of concrete batch plant for this project at this location):

a) #57 stone (13,950 tons)
b) Sand (9,750 tons)
c) Cement (3,525 tons)
d) Fly Ash (525 tons)

The stone and sand are hauled onto the site over the 0.17 mile unpaved (coarse gravel) haulroad (HR-1) and each is tailgate dumped (TD-1) onto a separate 100 feet by 125 feet (12,500 square feet) stockpile area (OS-1 (stone) and OS-2 (sand)) (See Attachment E – Plot Plan). The stone stockpile (OS-1) will have a water sprinkler system associated with it, while the sand

stockpile (OS-2) will not be constructed with a water sprinkler system. The water sprinkler system will be operated on days when the batch plant is operated and when conditions cause fugitive particulate matter to be emitted from the stone stockpile.

The cement and fly ash are hauled onto the site over the same 0.17 mile haulroad, but are pneumatically delivered into enclosed storage (PS-1 and PS-2). A baghouse (APCD-1) associated with the batch plant is used to collect fugitive particulate matter during the delivery of the cement/fly ash.

A front-end loader (FEL-1) is used to transfer the #57 stone and sand into separate Hoppers (H-1). The Hopper (H-1) individually feeds the stone and sand on separate conveyors (C-1) up into the Aggregate Bin (AB-1). The Aggregate Bin (AB-1) stores the stone and sand until allowed to gravity drop (GD-1) into the enclosed Batch Unit (WH-1) to be precisely weighed prior to dropping onto a conveyor (C-2) and delivered to the enclosed Central Mixer (M-1).

The cement and fly ash are transferred from enclosed storage (PS-1 and PS-2) via the enclosed pneumatic feed system and then allowed to gravity drop (PF/GD-1) into the enclosed Batch Unit (WH-2). The cement and fly ash are precisely individually weighed on a scale in the Batch Unit (WH-1) prior to delivery via gravity drop (GD-2) into the enclosed Central Mixer (M-1).

Upon delivery of all ingredients to the Central Mixer (M-1), the drum is rotated to allow the dry contents to become well mixed. Once mixed, 200 gallons of water is injected into the drum to create 10 cubic yards of concrete. The wet concrete does not have potential to create fugitive particulate emissions downstream from this location. Upon complete mixing in the Central Mixer (M-1), the concrete is transferred using a screw feed/gravity drop (SF/GD-1) through a shroud covered chute into an open dump truck (ODT-1) for delivery off-site. The open dump truck (ODT-1) travels the 0.17 mile of unpaved haulroad (HR-1) off site.

Golden Triangle Construction Co., Inc. proposes to utilize the following equipment at the Chester location in Hancock County, WV:

Table 1: Equipment List

Equipment ID No.	Description	Maximum Production Rate		Control Equipment[1]
		Hourly	Annual*	
H-1	Dual Hopper	----	23,700 TPY	PE
C-1	Conveyor Feed	19.75 TPH	23,700 TPY	N
AB-1	Aggregate Bin	----	23,700 TPY	PE
WH-1	Batch Unit Scale (Vince Hagan Co. HT/CM – 12400C-65)	19.75 TPH	23,700 TPY	PE
C-2	Conveyor Feed	19.75 TPH	23,700 TPY	N
WH-2	Batch Unit Scale (Vince Hagan Co. HT/CM – 12400C-65)	3.38 TPH	4,050 TPY	APCD-1

Equipment ID No.	Description	Maximum Production Rate		Control Equipment[1]
		Hourly	Annual*	
M-1	Central Mixer (Vince Hagan Co. HT/CM – 12400C-65)	23.13 TPH	27,750 TPY	APCD-1
SC-1	Screw Auger	23.13 TPH	27,750 TPY	FE
Storage		**Storage Capacity**	**Maximum Yearly Throughput**	
PS-1	Cement Silo	140 Tons	3,525 TPY	FE, APCD-1
PS-2	Fly Ash Silo	100 Tons	525 TPY	FE, APCD-1
OS-1	#57 Stone Stockpile	13,950 Tons	13,950 TPY	SW-WS
OS-2	Sand Stockpile	9,750 Tons	9,750 TPY	N

[1] FE - Full Enclosure; PE - Partial Enclosure; APCD-1 - Vince Hagan, Model 1083-JP; N/A - Not Applicable; N - None

* Based on 1200 maximum operational hours annually

DESCRIPTION OF FUGITIVE EMISSIONS (taken from the application)

The baghouse (APCD-1) associated with the mobile concrete batch plant controls fugitive particulate matter emissions from the following source points at 99.9% efficiency: a) the pneumatic feed (PF-1) at Cement Storage units (PS-1 and PS-2); b) the pneumatic feed and gravity drop (PF/GD-1) of cement and fly ash into the enclosed Batch Unit (WH-2); and c) the gravity drop (GD-1) of cement and fly ash into the enclosed Central Mixer (M-1).

A pressurized water spray truck (WT-1) is used to control fugitive particulate matter emissions on the 0.17 mile unpaved (coarse stone) haulroad (HR-1). The water truck (WT-1) is capable of delivering 350 gpm (0.2 to 0.5 gallons per square yard).

All trucks entering the property will be tarped and the facility speed limit will be 15 mph.

A water sprinkler system (SW-WS) will be installed on the #57 stone stockpile (SP-1) to control fugitive particulate matter emissions from the following: a) truck dump (TD-1), b) stockpile wind erosion (SPWE-1), c) stockpile manipulation (SPM-1), and d) the front-end loader transfer (FEL-1) to the Hopper (H-1).

Water (ST-1) will be added at the Central Mixer (M-1) to create wet concrete from the dry mixture. Approximately 200 gallons of water is added to each 10 cubic yard mix. The addition of water to the mixture essentially reduces any potential to create fugitive particulate matter emissions anywhere downstream of the Central Mixer (M-1).

Many of the material transfers occur within enclosed spaces, thus, reducing the potential for creating fugitive particulate matter emissions. The cement and fly ash are delivered in enclosed trucks and pneumatically fed (PF-1) into enclosed storage (PS-1 and PS-2). The stored

cement and fly ash (PS-1 and PS-2) are then transferred via an enclosed pneumatic feed (PF/GD-1) into the enclosed Batch Unit (WH-2). Also, the #57 stone and sand eventually enter into an enclosed Batch Unit (WH-1). Both of these Batch Units (WH-1 and WH-2) transfer the weighed out material into the enclosed Central Mixer (M-1). The Central Mixer (M-1) discharges to open bed tandem trucks through a shroud covered chute.

SITE INSPECTION

Greigory Paetzold of the WVDAQ Northern Panhandle Regional Office performed a pre-construction site visit on April 06, 2017. The site location covers approximately 2.5 to 3 acres, and has about 650' of frontage along the east side of South Aberdeen Road. There are four homes located across South Aberdeen Road. The applicant's "Attachment E Plot Plan", on the WVDEP website, did not show the proximity of emission units relative to these dwellings, but the application did include siting criteria waivers from three of the residents. The waivers are signed and notarized, and acknowledge that the proposed plant may be constructed within 300' of their homes. The proximity could range from less than 100' to more than 600' between the homes and the emission units. The nearest surface water, North Fork of Tomlinson Run, is over 1,000' from the site. Considering the limited duration of the facility, and the proposed controls listed in the application, any impact on nearby residents should be negligible.

Directions: From Chester, WV take U.S. Route 30 (Lincoln Highway) East to the intersection of U.S. Route 30 and S.R. 8 near Shorty's Place. Turn onto the ramp leading S.R. 8 and then make a quick right onto the facility's haulroad leading to the concrete batch plant.

ESTIMATE OF EMISSIONS

Golden Triangle Construction Co., Inc.'s consultant used the provided General Permit G50-B Emission Calculation Spreadsheet for concrete batch plants, G50BECALC, to calculate emissions for the portable concrete batch plant. The estimated emissions were checked for accuracy and completeness by the writer.

The maximum controlled emissions for Golden Triangle Construction Co., Inc.'s facility are summarized in the following table:

Table 2: G50-B109 Emissions Summary:

Emission Source	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Unpaved Haulroad Emissions	1.25	0.75	0.37	0.22
Stockpile Emissions	0.83	3.63	0.39	1.70
Fugitive Emissions Total	*2.07*	*4.37*	*0.76*	*1.92*
Point Source Emissions				
Transfer Point Emissions	1.00	0.60	0.54	0.32
Point Source Emissions Total (PTE)	*1.00*	*0.60*	*0.54*	*0.32*
FACILITY EMISSIONS TOTAL	**3.08**	**4.98**	**1.29**	**2.25**

GENERAL PERMIT ELIGIBILITY

Golden Triangle Construction Co., Inc.'s application for a mobile concrete batch plant is eligible for a Class II General Permit registration G50-B because:

1. It has the SIC of 3273;
2. It is not a major source as defined in 45CSR14, 45CSR19 or 45CSR30;
3. It is not subject to 45CSR2, 45CSR3, 45CSR14, 45CSR16, 45CSR19, or 45CSR30;
4. It is not a cement manufacturing plant (NAICS 327310; SIC 3241), concrete page manufacturing plant (NAICS 327332; SIC 3272) or clay brick or structural clay tile manufacturing plant (NAICS 327121; SIC 3251);
5. It meets the definition of concrete batch plant set forth in DRAFT class II General Permit G50-B;
6. It does not incorporate:
   a. A mine, quarry or crushing and screening operation;
   b. A highwall truck dump;
   c. A petroleum liquid storage vessel or tank greater than 39,889 gallons capacity; or
   d. A petroleum liquid storage vessel or tank greater than or equal to 19,812 gallons capacity and a working true vapor pressure which exceeds 15.0 kPa (2.17 psia);
7. It will not require an individual air quality permit review process and/or individual permit provisions to address the emission of a regulated pollutant or to incorporate regulatory requirements other than those established by 45CSR7, 45CSR13, and 45CSR17;
8. It is not located in or does not significantly impact the area of Brooke County west of State Route 2, north of an extension of the southern boundary of Steubenville Township in Jefferson County, Ohio and south of the Market Street Bridge;
9. It is not located within the boundaries of or which may significantly impact the Weirton nonattainment area; or
10. It is not located in or which may significantly impact an area which has been determined to be a PM10 maintenance or nonattainment area.

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed construction of a mobile concrete batch plant is subject to the following state and federal rules:

45CSR7 *To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations*

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the

particulate matter control methods and devices proposed within application G50-B109 are in operation.

45CSR13 *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation*

The proposed construction is subject to the requirements of 45CSR13. The proposed mobile batch plant requires an application to construct. The applicant submitted an application fee of $500 and published a Class I legal advertisement in the *The Review* on March 08, 2017.

45CSR17 *To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter*

Per §45-17-3.1 no person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.

45CSR22 *Air Quality Management Fee Program*

This rule establishes a program to collect fees for certificates to operate and for permits to construct, modify or relocate sources of air pollution. Funds collected from these fees will be used to supplement the Director's budget for the purpose of maintaining an effective air quality management program. An Application for a Certificate to Operate (CTO) will be enclosed with the permit at time of issuance as this will be a new construction.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

A toxicity analysis was not performed because the pollutants that will be emitted from this facility are PM (particulate matter) and PM10 (particulate matter less than 10 microns in diameter), which are non-toxic pollutants.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the limit of the proposed construction. This facility will be located in Hancock County, WV, which is currently designated as 1997/2006 Maintenance area for $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

RECOMMENDATION TO DIRECTOR

The information contained in this construction application indicates that compliance with all applicable regulations should be achieved when all proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. Therefore, the granting of a G50-B registration to Golden Triangle Construction Co., Inc. for the operation of a mobile concrete batch plant located near Chester, Hancock County, WV is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

April 06, 2017
Date